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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER				
DANIELSEN, NATHAN ANDREW				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/581,115

Applicant(s)

TUKKER ET AL.

Examiner

Nathan Danielsen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 May 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/CD)
Paper No(s)/Mail Date 05/31/06
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

1. Claims 1-8 are pending.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

3. The drawings are objected to because the unlabeled rectangular box(es) shown in the drawings should be provided with descriptive text labels. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claim 5 is objected to because "said processing means" should be changed to --said means for processing--; "said digital signals" should be changed to --said at least N digital signals--; and "associated to a light spot" should be changed to --associated with a light spot--. Claim 8 is objected to because

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"associated to a light spot" should be changed to —associated with a light spot—. Claim 6 is objected to because "deiving" should be changed to —deriving—. Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 5-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 5, it is unclear which of the "at least N digital signals" and/or "one of said digital signals" the limitation "said digital signal" (found in the "phase-locked loop circuit" paragraph) refers.

Claims 6 and 7 are rejected as being indefinite due to their dependence from an indefinite claim.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

8. Claims 1-3 are rejected under 35 U.S.C. 102(a) as being anticipated by Brewen et al (US Patent 6,693,872; hereinafter Brewen).

Regarding claim 1, Brewen discloses a storage medium carrying meta-tracks of N ($N > 1$) bit-rows that store content information (elements 24a-24d in at least figures 5 and 10 and col. 3, lines 7-10), two adjacent meta-tracks being separated by a guard band of at least one bit-row referred to as guard band bit-row (elements 32a and 32b in at least figures 5 and 10 and col. 3, line 63 through col. 4, line 22), at least one guard band bit-row storing non-content information (col. 4, lines 3-6).

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Regarding claim 2, Brewen discloses everything claimed, as applied to claim 1. Additionally, Brewen discloses where said non-content information comprises clock data to be used for reading said content information from said storage medium (col. 4, lines 3-13).

Regarding claim 3, Brewen discloses everything claimed, as applied to claim 1. Additionally, Brewen discloses where said non-content information comprises control data to be used for reading/writing content information from/onto said storage medium (col. 4, lines 3-22; where clock data recorded in elements 32a and 32b can be interpreted as a form of control data in that the clock data can be used to control the generation of clock offset signals which are used to recover data recorded in elements 24a-24d).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over "Two-Dimensional Optical Storage" M.J. Coene, Optical Storage, May 11- 14, 2003, Hyatt Regency Vancouver, BC Canada (hereinafter Coene), in view of Brewen.

Regarding claim 4, Coene discloses a device for reading a storage medium that carries meta-tracks of N (N>1) bit-rows, two adjacent meta-tracks being separated by a guard band of at least one bit-row referred to as guard band bit-row (¶ 2, lines 5 and 6 and figure 1), said device comprising:

an optical unit for generating at least N light spots (¶ 3, lines 19-23), receiving at least N reflected light spots and generating at least N analog signals associated each to one of said reflected light spots (¶ 3, lines 19-23), in order to read in parallel a meta-track (¶ 3, lines 19-23), and

means for processing at least N of said analog signals in order to recover content information stored in said meta-track (¶ 5 and figure 2).

However, Coene fails to disclose where the optical unit reads a guard band bit-row adjacent to said meta-track and where the means for processing recovers non-content information stored in said adjacent guard band bit-row.

In the same field of endeavor, Brewen discloses where the optical unit reads a guard band bit-row adjacent to said meta-track (col. 3, line 63 through col. 4, line 22) and where the means for processing recovers non-content information stored in said adjacent guard band bit-row (col. 3, line 63 through col. 4, line 22).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the apparatus of Coene with that of Brewen, for the purpose of obtaining a clock synchronized with the recorded data (col. 3, line 63 through col. 4, line 22).

Allowable Subject Matter

11. Claim 8 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
12. Claims 5-7 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
13. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, either alone or in combination, fails to teach or suggest:

- a. In claim 5, where 5. A device as claimed in claim 4 wherein, said non-content information comprising clock data, said processing means comprises a phase-locked loop circuit for receiving one of said digital signals that is associated to a light spot that is at least partly reflected by said guard band bit-row such that said digital signal carries said non-content information, and for generating a clock correction signal therefrom, and a sample rate converter controlled by said

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clock correction signal, for receiving N of said digital signals and for generating N corrected digital signals, in combination with the remaining limitations in claim 8 and the limitations in claim 1; and

b. In claim 8, where said processing means comprises a detection circuit comprising means for receiving one corrected digital signal that is associated to a light spot that is at least partly reflected by said guard band bit-row such that said corrected digital signal carries said control data, and deriving therefrom a sequence of bits corresponding to said control data, and a time recovery circuit for receiving said reference signal and at least part of said N corrected digital signals, and for generating a time correction signal used for controlling said sample rate converter, in combination with the remaining limitations in claim 8 and the limitations in claim 1.

Relevant Prior Art

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

c. Muzio et al (US Patent Application Publication 2004/0252607) disclose an optical disk recording apparatus in which a PLL derives a clock signal from data having passed through a sample rate converting circuit, which clock is then used by the sample rate converting circuit;

d. Bates et al (US Patent 4,290,122) disclose an optical disk having a servo track, which includes clock data, located as a central track between equal numbers of data tracks which are reproduced simultaneously; and

e. Coene (International Patent Application Publication WO 2003/034595) discloses an optical disk having a meta-tracks bounded by guard bands, where data is arranged in a hexagonal shape in the meta-tracks.

Closing Remarks/Comments

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Danielsen whose telephone number is (571)272-4248. The examiner can normally be reached on Monday-Friday, 9:00 AM - 5:00 PM Eastern Time.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, A.L. Wellington can be reached on (571) 272-4483. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrea L. Wellington/
Supervisory Patent Examiner, Art Unit
2627

/ND/
12/11/2009